necessary foundation in normal mental processes would seem to be essential. The scientist, with a mind unbiased by unsupported theory, creed or system of philosophy, cannot dissociate mental processes from brain activity, a physiological activity of brain matter. This conception has lately been given a concrete explanation by Dercum, based on our present knowledge of brain physiology. It is a step forward and serves as a timely and scientific refutation of the absurd conceptions of certain sects whose unthinkable dogma is exactly the opposite: there is no matter, no disease; disease is not material but is the creation of a worldly imperfect and fearful mind.

It is my earnest wish that all of us who are gathered here tonight may live to witness and take part in the progress of neuro-psychiatry in the next two decades. It is our great privilege to be active workers in that branch of medicine representing the highest specialized function of the human organism.

To my way of thinking there can be no greater service to mankind than to contribute towards its betterment, and when one has achieved such a result this must be his highest reward.

(909 Hyde Street.)

Standardizing Human Beings—Governor Miller of New York says that the rising issue in the country is the old issue of State's rights.

Perhaps. But it is very likely that another issue will interpose and demand a prior hearing. This issue will deal with the rights of individuals.

The movement to standardize machinery, mechanical processes and the products of manufacture have been attended, hardly observed, by a movement to standardize human beings. . . .

Laws that interfere with individual rights—rights that are exercised without harming society, neighbors or other individuals—have seldom been enforceable during the entire career of mankind. But such laws have been of service to certain elements—the kinds that practice blackmail.

Legislators who aspire to get their names attached to new laws, professional reformers who have carried through a good reform and take up with anything that can be called a reform in order that their incomes shall not be cut off, foolish standardizers and half-cooked societies—these are forcing the revival of an issue as old as the hills. The issue will lead to a definite decision as to what rights an individual may exercise out of his own initiative without respect or reference to the tastes of other people, their prejudices, inherited customs or the standardizing associations to which they belong.—Detroit Journal.

Socialistic Tendencies in Medicine — Socialized medicine can no more succeed than socialized industry has succeeded. Its failure is as sure as its consequences are appalling. There can be no such thing as free dispensaries and free clinics—they are bought and aid for by every member of the community. They are expensive, as is everything conducted by the Government, and the care given by the State to the sick has been and always will be inefficient. Taxpayers have a right to protest against paying medical bills for those who are financially able to defray their own expenses. It is making liars and cheats of a number of people.—James A. Gardner in The American Medical Press.

POSTURE IN ITS RELATION TO NUTRITION *

By ALFRED EDWARD MEYERS, M. D., San Francisco
(From the Department of Pediatrics of the University of California).

It has been only within the last few years that serious attention has been given to the influence of defective posture on the health and efficiency of an individual or vice versa. And yet, one cannot help noticing that practically all malnourished children have atrocious postures.

The question which naturally arises is: "Is bad posture primarily due to malnutrition, or are the ill effects of a defective posture sufficient to contribute toward the condition of malnutrition?" Practically speaking, every child is born with a spine that can be developed to meet the various exigencies of life, and also a normal digestive system. In the case of the breast-fed infant, whose nourishment is sufficient to meet its growing needs, digestion proceeds in a normal manner. But when we consider some of the practices which are in vogue during infancy, the sins of omission as well as commission, it is quite obvious that the posture is at least the first to suffer. The average mother in holding, nursing, carrying, bathing and dressing her month-old infant handles it as if it were a plaster doll, and seems ignorant of the fact that she has much to do in the moulding of its little spinal column. She adds insult to injury when she allows her baby to sleep with a pillow, and often under a weight of covering that causes the child to perspire and holds its legs in the air, flexed at the hips. But perhaps her greatest offense is to make the child sit up or walk before its little muscles are strong enough to support it, and as a result, sooner or later, the little fellow is wearing a brace, or an operation is performed to correct the bow-legs or knock-knees, the result of a parent's lack of knowledge.

If the infant's diet happens to be an artificial one and is properly fed, his digestion probably will not suffer by the lack of attention to his bodily mechanics any more than in the case of the breast-fed child. It is only when the metabolism is upset because of a poorly balanced diet, or later suffers from one of the nutritional disturbances, e. g., scorbutus, pellagra and rickets, that the element of malnutrition comes in and forms a sort of vicious circle:

Rickets: Weak muscles and ligaments, crowding of the lungs, gastro—and enteroptosis, muscle-fatigue, malnutrition.

Muscles and ligaments that are weak fall short in their function of supporting the bony framework, and as a result various ptoses occur. In the condition known as skeletal ptosis, there is a downward displacement of the bones, shown by the drooping of the head, the falling in and down of the chest, and exaggeration of the normal curves of the spine. In visceral ptosis, which is usually associated with skeletal ptosis, there is a downward displacement or crowding of the ab-

* Read before the Fifty-first Annual Meeting of the Medical Society of the State of California, Yosemite Valley, May, 1922.

dominal organs, with unquestionably considerable alteration of function.

There are two periods in the life of a child in which deformities chiefly occur: early childhood, when the upright position is first assumed, and adolescence, when the rapid growth and other changes lessen the stability of the supporting structures. Emerson found that fifty per cent of the children of the Little Wanderers' Home, and seventy per cent of the patients who attended the Children's Outpatient Department of the Massachusetts General Hospital had defective postures. Probably the latter figure shows the real condition as it exists among children, inasmuch as every child who was referred to the Children's Nutritional Clinic of the University of California for underweight showed one or more of the following postural defects:

1. Exaggerated dorsal spine with round shoulders and forward head.
2. Exaggerated lumbar spine with protruding abdomen.
3. Functional and structural scoliosis.
4. Fallen arches or flat-feet.
5. Rickets (flaring ribs, Harrison's Groove).
6. Bow-legs, knock-knees.

Is it not about time that the physician included in his routine examination a closer observation of a child's statics, and not leave it to the realm of the specialists, as we are accustomed to do? It is just as essential, and probably more so, to true up the structural system of a child as it is to true up the various parts of an automobile. A child loses enough energy in a day without adding to it that constantly lost from maladjustment of his body.

What is a correct posture? The ideal posture is one in which all the muscles of the body work in closest harmony, with the least amount of friction, and with the greatest amount of efficiency. All authorities seem to agree that a child, in the assumption of a good posture, must keep his head up, chin level, chest high, shoulder blades flat on the back, abdomen in, back flat, legs straight, toes forward, and weight carried on the forward part of the foot. With such a position a vertical line, dropped from the front of the ear to the forward part of the foot will parallel the axes of the large segments of the body, and seems to coincide with a line which passes vertically through the center of gravity.

It is important to carry the head erect and the chin level because of its direct influence on the spine, chest and shoulders; it also affects the position of the stomach, liver and other abdominal organs, which are suspended secondarily from the neck. A collapsed chest means insufficient space for the organs of the chest to do their work efficiently. Round shoulders mean a decreased rib-cage. Woods-Hutchinson says "that one of the most important factors in the respiratory development and capacity of the human chest is the extent to which the scapuae come to lie upon the posterior wall." A contracted abdomen with its strong muscular walls holds in place the great organs of the trunk, and also aids the circulation of the blood through these organs. Exaggerated curves of the spine affect the diameters of the trunk and alter its proportions. Trunk capacity implies large organs and plenty of room in which they may do their work. Bow-legs and knock-knees put unusual strain on the ligaments, muscles and joints of the body, especially the sacro-iliac. Toeing out is one of the chief causes of flat-feet, due also to abnormal strain on the ligaments of the arch. Carrying the weight too far backward over the heels throws the whole body out of plumb and sacrifices the elasticity of the foot that saves jar in walking. Such a posture guarantees the minimum of muscular action, enlarges the rib-cage, raises the diaphragm, and thus gives to the abdominal viscera its maximum of space for normal functioning.

Incorrect Postures: For practical purposes there are four types of defective posture that need to be considered. The commonest of these is the position of fatigue, because it is the relaxed position which one is liable to assume temporarily when fatigued. The vertical line test shows that there are three main divisions of the body instead of one continuous vertical line as in the normal standing position. The second type of bad posture is one in which the lower part of the back is straight—the small of the back is obliterated. The head and neck are carried forward as in the fatigued position. The third type is the result of over-extension rather than flexion, and results in extreme lordosis. This, in addition to toes out, is the position we all assumed when we were told years ago to stand straight. The fourth type is seen by observing the child from the front or back, and is called lateral deviation or scoliosis. According to various workers scoliosis is present in from 15 to 25 per cent in all children with defective posture.

Factors Contributing to Faulty Posture: Inasmuch as the average person spends more time in sitting than in standing, every child should be taught that, to sit correctly the trunk must be perfectly erect or perhaps inclined slightly forward or backward, and not creased at the waist, which position interferes with the work of the heart, lungs and digestive system. Sliding down in the seat changes the tilt of the pelvis, increases the dorsal curve, and creases the waist. Sitting on one or both feet for any length of time shows its influence on the position of the spine. Prolonged standing, especially in one position, is probably one of the most muscle-tiring of the common everyday acts. The unrelieved strain put on the muscles, ligaments and heart soon leads to a permanent weakening, and as a result broken arches and other postural defects occur, a condition very common among housewives, street car conductors and motormen. The characteristic pose among children of shifting the weight to one foot is the usual outcome of prolonged standing, and in not a few cases is productive of constitutional harm. Walking is one of the best of exercises, especially if the movements of the body

are unimpeded. Every child should be taught that there is a right and a wrong way—that the right way is for the heel to touch the ground first, quickly followed by a transference of the weight to the ball of the foot; and that in bringing the heel down with any great force the elasticity of the step is lost and is replaced by a harmful jar throughout the body. There should always be some mechanical reaction to the movements of the foot or leg, as in the slight swaying of the arms at the side of the body. The same erect posture should be maintained in stair-climbing, a vigorous type of exercise, which stimulates circulation and deep breathing. But care should be taken in not subjecting a child with a potentially weak heart, even though it shows no murmur through the stethoscope, to the rigorous effects of climbing long flights of stairs.

One of the reasons, perhaps, why postural deformity is rare among quadrupeds is that they are free from the distorting influences of conventional dressing. For instance, notice the shirt and coat which are cut so high in the neck behind that they lie like the yoke of a harness across the cervical spine, thrusting the head forward. In addition to this, the wearing of suspenders or pinning the lower garments high up on the undershirt, pulls the shoulders forward, and helps gravity on its downward pull. Even the wearing of low socks, held in place by tight elastics, exerts its influence on posture, to say nothing of the bunions, corns, etc., the inevitable result of high-heeled, pointed-toe shoes.

Many of the common, everyday acts of children which if persisted in contribute their share in deforming the posture. How often we see little children, carrying their smaller brother or sister, who weighs nearly one-half as much as they do; or, as is a common sight among child labor, the poor little fellow who is burdened down with a heavy load steps into manhood with a serious handicap—a static deformity. The carrying of books to and from school probably does more in the establishment of an incorrect posture than any other school requirement. This disfiguring habit can be materially helped by dividing the load, carrying the books on alternate arms on alternate days, or dividing the load at the end of a strap, slung over the shoulders.

Sleep, like nutrition, is fundamental to growth and development. Too little attention is given in the individual home to the atrocious positions which many children assume while sleeping. To lie on the side for hours with the chin resting on the knees is anything but relaxation for the erector spinae muscles. Dr. Fitz says: "The period of sleep is one-half to one-third the growing time of the child, and consequently the pressures and strain of an habitual sleeping posture have an opportunity to influence the growth of the vertebrae and ligaments, and shape them in accordance with their relative position at such time." It is just as essential for a child to change its position during sleep as it is while in the standing position. The factors mainly responsible for a child assuming bad posture in bed are: A poor spring and mattress, high pillows, heavy bed-clothes, cold room, and cold sheets. The simple act of placing a hot-water bag at a child's feet will do much toward making him extend his legs and thus relieve considerable strain.

Relation of Posture to Efficiency: It has been established by statistical tests that physical or mental defect or weakness is in general accompanied by poor posture. The average record of pupils in the poor-posture group has been found to be appreciably lower than the good-posture group in attendance, in department, in physical activity and endurance, in manual training, and in commercial success after leaving school. The army appreciates the value of posture in the training of its soldiers. The exercises, drills, clothing, and sleeping paraphernalia are chosen with this fact always in mind.

Posture as an Expression of Intelligence and Character: The principle that underlies the adage: "Tell me what you eat and I'll tell you what you are" may well be applied to posture: "Show me how you stand and I'll tell you what you amount to." Members of the theatrical profession are the best examples of this fact. It is difficult to picture such men as Sothern and Mantell, in many of their leading roles, assuming anything but their fullest stature, while those with baser parts are always seen in cringing attitudes. The person who would impress, command, or inspire must stand correctly, must look up and not down, forward and not back, while the stooped, grovelling, and hunched-back set are usually the dregs of humanity.

Posture in Its Relation to the Body as a Whole: If we consider the human body to be the most efficient type of machine, why do we not give to it its proper amount of mechanical consideration. The life and efficiency of any machine depends upon the harmonious working of all its members, and just as the whole machine suffers when any one system is not working properly, so do our bodies suffer when they are out of alignment. Not only does the structural framework suffer, but the heart and lungs cannot carry on their normal function in a cavity that is encroached upon; the hampered excursions of the diaphragm, the sagging of the stomach and the colon with interference of their blood-supply, and the pressure of those organs on the kidneys and bladder are the indirect results of a defective posture.

Conditions Secondary to Defective Posture: We are just beginning to appreciate that the examination of a child's posture is as much a part of the diagnostic technique of the pediatrician as it is of the orthopedist. Unquestionably, much of the pathology attributed to focal infections would clear up under postural treatment. Likewise, a large proportion of the growing pains of childhood would doubtless disappear if we paid as much attention to statics as we do to diet. We are very easily convinced that such conditions as backache, legache, footache, painful shoulder, subacute arthritis, and even neuritis might be due to mechanical defects because they are directly referable. Why

is it not possible for conditions to arise that are indirectly due to poor bodily mechanics just as it is possible for a heart to enlarge indirectly from some particular cause? Talbot and Brown have shown that cyclic vomiting is usually the result of a visceroptosis, an accompaniment of poor statics. They have also noted that in such children there is an intolerance for fats. In our work on malnutrition we have observed that many cases of constipation, abdominal pain, poor appetite, and various gastro-intestinal upsets have absolutely disappeared just as soon as the child was taught to stand correctly. As Goldthwaite has shown, the sagging of the stomach and the intestines are sufficient to cause many disarrangements of the liver, pancreas, spleen, kidney and bladder, and rectum. Williams called attention to the prevalence of chlorosis in early adolescence, which he felt was due to tight dressing. Goldthwaite reports that in the examination of the American Expeditionary Forces, many cases diagnosed D. A. H. (deranged action of the heart) cleared up entirely when the patient was taught to stand correctly. Brown has demonstrated a decided decrease in the normal excursion of the diaphragm in patients with faulty postures.

Every case of lordotic or orthostatic albuminuria, which has been diagnosed in the Children's Outpatient Department, with the exception of one, which was complicated by obesity, showed varying degrees of malnutrition, ranging from 5 to 30 per cent under weight for its height, and all showed postural defects, especially in the lumbar curve. This condition was so constant that all cases of malnutrition showing faulty posture, but with no albumin in the urine, were given what might be called a "provocative test" for albumin; that is, were made to stand against the wall in a hyperextended position. This was accomplished by having the heels and head against the wall with a roll about six or eight inches in diameter in back of his lumbar spine. In practically every case it was possible to obtain in about fifteen minutes albumin, ranging from a slightest possible to a definite trace. Because of the frequent association of malnutrition and orthostatic albuminuria, we assumed that the passing of serum albumin in the urine was an important factor in causing, or, at least, maintaining the condition of malnutrition. The fact that the albumin disappeared after the application of a plaster of paris jacket and the child began to gain in weight faster than normally, lends weight to the fact that the so-called "functional albuminuria" deserves more significance than is usually ascribed to it. It may be argued that the rapid gain in weight was due to the change in diet and the correction of the posture, and yet, just as soon as albumin appeared in the urine when the cast became loose, even though it held him in a fairly good position, his rate of gain was appreciably less. Furthermore, when these children were treated from a dietetic standpoint alone, they did not gain, and those treated with braces alone showed a much slower rate of gain than when their diets were also corrected. Children suffering with malnutrition and defective posture, but with no albumin in the urine, responded favorably to this treatment.

Several cases of enuresis have been materially helped after a few visits to the physiotherapy department, one case reporting complete cessation of the habit after four periods. Grover reported rather satisfactory results from the application of hygienic measures in the treatment of enuresis, but if one will examine his principles of treatment he will note: "Nap at noon, no active play after 4 p. m. (with probable rest) and bed at 7 p. m." In other words, by increasing the periods of rest he decreased the periods of bad posture. Even a child's disposition will materially change from the effects of poor statics, causing him to be irritable, nervous, fidgety, and even incorrigible.

The question of mechanical treatment and directions for exercises lies wholly within other provinces, but the prophylaxis of defective posture is the pediatrist's work. Mothers should be taught the do's and don'ts as regards the handling of the child from the moment it enters the world until it leaves the parental fold. Teachers should know the value of good posture and how to help a child obtain it. The child himself should be taught that the maintenance of a good posture is one of the chief "rules of the game."

Physicians and Public Health—If public health is a purchasable commodity how much can a community afford? Some forms of health work some communities cannot afford; the question is to find out what can best be afforded and applied to secure practical results. For example, it would be perfectly possible to raise strawberries in the Arctic Circle, yet it has been estimated that each strawberry so raised would cost $11.40. The abstract theory of raising them there would be proved, but there would be no practical result.

Some foolish people have claimed that public health administration will do away with the need for the medical profession in private practice. Such a development can never come, and any plan, system, or propaganda which indicates that there will be a lessening in the importance of the medical profession as such, is fallacious. However, all public health efforts arising as they do from the practical results of private medical practice, must be based on the confidence, good-will and support of the profession.

Health commissioners cannot be public health despots. Their field is determined by their ability to grapple with concrete problems, and ability to co-operate hand in hand with the profession to which they belong.—George E. Vincent, President of the Rockefeller Foundation.

Though the world know me not, may my thoughts and actions be such as shall keep me friendly with myself. Lift my eyes from the earth and let me not forget the uses of the stars. Forbid that I should judge others, lest I condemn myself. Let me not follow the clamor of the world, but walk calmly in my path. Give me a few friends who will love me for what I am; and keep ever burning before my vagrant steps the kindly light of hope. And though age and infirmity overtake me, and I come not within sight of the castle of my dreams, teach me still to be thankful for life and for times' olden memories that are good and sweet; and may the evening's twilight find me gentle still.—Max Ehrmann.